



# Uneven Opportunity: What Drives Metro Area Differences in Employers' Preferences for Education?

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Reinventing Our Communities: Transforming Our Economies Conference  
September 21, 2016



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# Presentation overview

- I. What is an opportunity occupation?
- II. Which are the most prevalent?
- III. Do employers agree that a bachelor's degree isn't required?
- IV. How much regional variation is there in employers' preferences for education?
- V. Where are employers' preferences for a bachelor's degree the highest?
- VI. Which job advertisements are likely to request a bachelor's degree?
- VII. What are the implications of these findings?



# I. What is an opportunity occupation?

- An *opportunity occupation* is one that:
  - is generally considered accessible to a worker without a bachelor's degree.
  - pays an annual median wage at or above the national annual median wage, adjusted for local differences in consumption prices.
- *Identifying Opportunity Occupations in the Nation's Largest Metropolitan Economies (2015)*
  - With Federal Reserve System colleagues Kyle Fee and Lisa Nelson (FRB Cleveland) and Stuart Andreason (FRB Atlanta)
  - 100 largest metro areas



# I. What is an opportunity occupation?

- We use three data sets to understand the level of education required/preferred for each occupation:
  - One indicates the typical level of education needed to enter an occupation (Bureau of Labor Statistics; national data)
  - One is based on a survey of current workers and occupational experts on the level of education needed to perform the job (O\*NET; national data)
  - One reflects the minimum level of education included in a database of online job advertisements (Burning Glass Technologies; metro-level data)



## II. Which are the most prevalent?

The 12 largest opportunity occupations for which an assessment of entry-level education and the views of current workers agree:

OCCUPATION	EMPLOYMENT
Registered Nurses	1,763,300
First-Line Supervisors of Office and Administrative Support Workers	1,025,020
Bookkeeping, Accounting, and Auditing Clerks	848,100
Heavy and Tractor-Trailer Truck Drivers	824,960
First-Line Supervisors of Retail Sales Workers	719,270
Executive Secretaries and Executive Administrative Assistants	550,500
Maintenance and Repair Workers, General	538,510
Computer User Support Specialists	440,650
Police and Sheriff's Patrol Officers	430,880
Licensed Practical and Licensed Vocational Nurses	415,170
Secretaries and Administrative Assistants	406,620
Electricians	385,080



Source: Wardrip, Keith, Kyle Fee, Lisa Nelson, and Stuart Andreason. *Identifying Opportunity Occupations in the Nation's Largest Metropolitan Economies*. Federal Reserve Banks of Philadelphia, Cleveland, and Atlanta, 2015.

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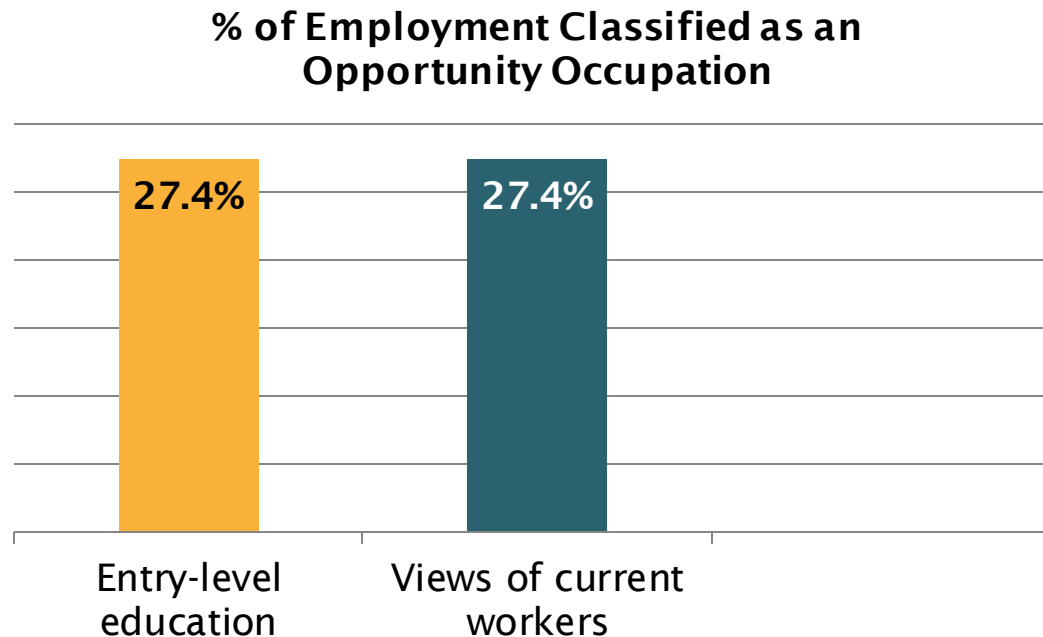
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# III. Do employers agree?

The share of employment classified as an opportunity occupation is identical when calculated using entry-level education and the views of current workers...



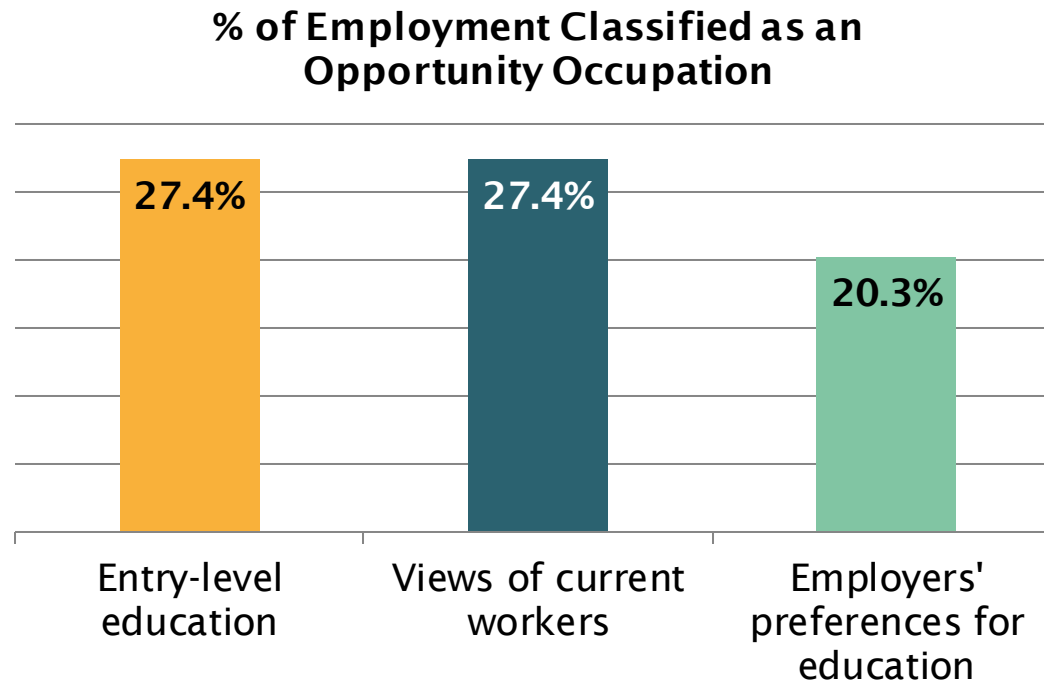
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# III. Do employers agree?

...but lower when using employers' preferences for education as expressed in online job advertisements.



Source: Wardrip, Keith, Kyle Fee, Lisa Nelson, and Stuart Andreason. *Identifying Opportunity Occupations in the Nation's Largest Metropolitan Economies*. Federal Reserve Banks of Philadelphia, Cleveland, and Atlanta, 2015.



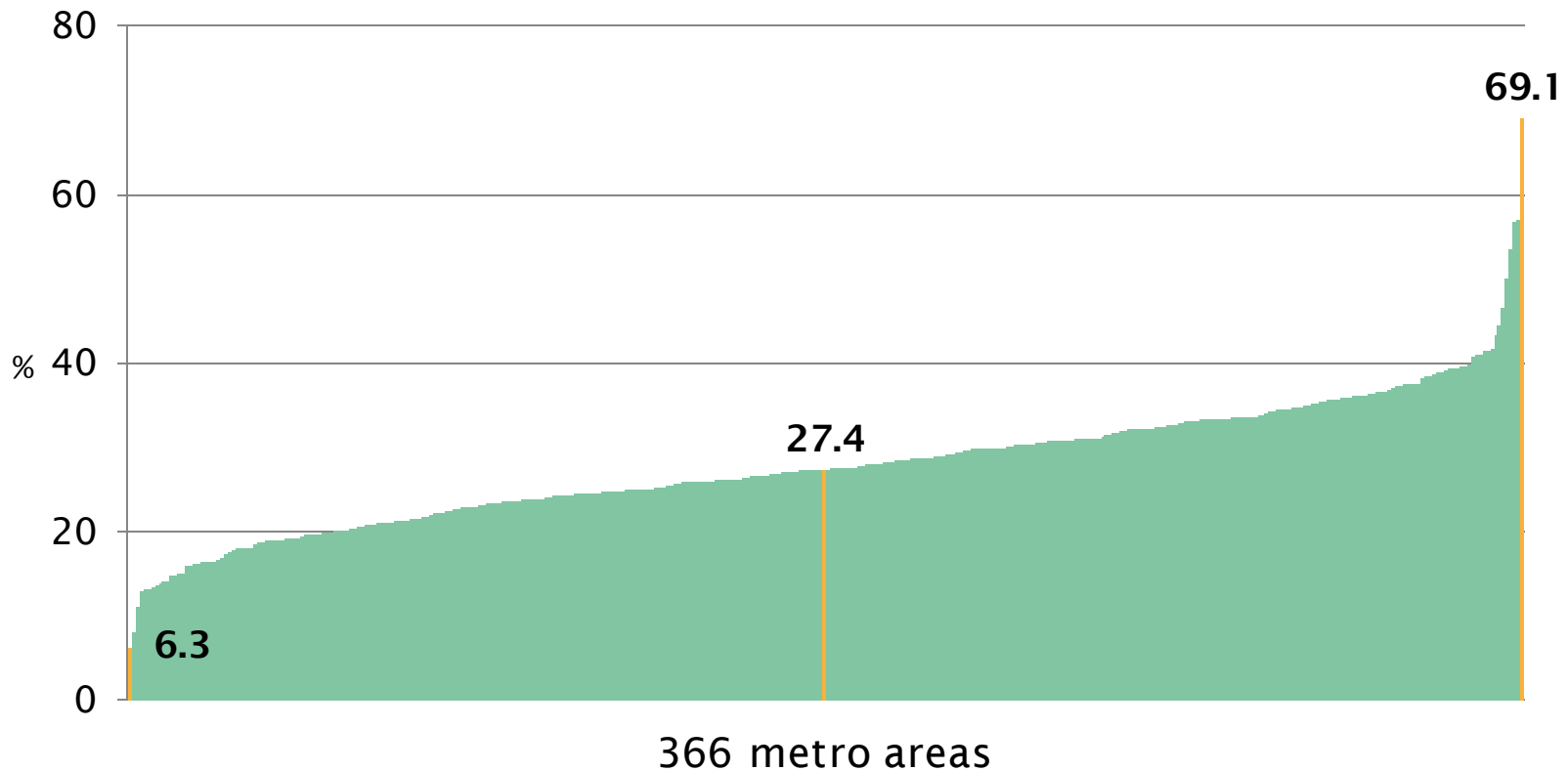
# Extension of the original research

- Research questions:
  - What are the characteristics of metro areas in which employers' preferences for a bachelor's degree are the highest?
  - What makes an online job advertisement more or less likely to request a bachelor's degree?
- Research team:
  - Keith Wardrip (FRB Philadelphia), Stuart Andreason (FRB Atlanta), and Mels de Zeeuw (FRB Atlanta)
- Focusing on four specific opportunity occupations:
  - Computer user support specialists, registered nurses, retail sales supervisors, and executive secretaries/executive administrative assistants



# IV. How much regional variation is there?

Share of job ads requesting a bachelor's degree+ for retail sales supervisors

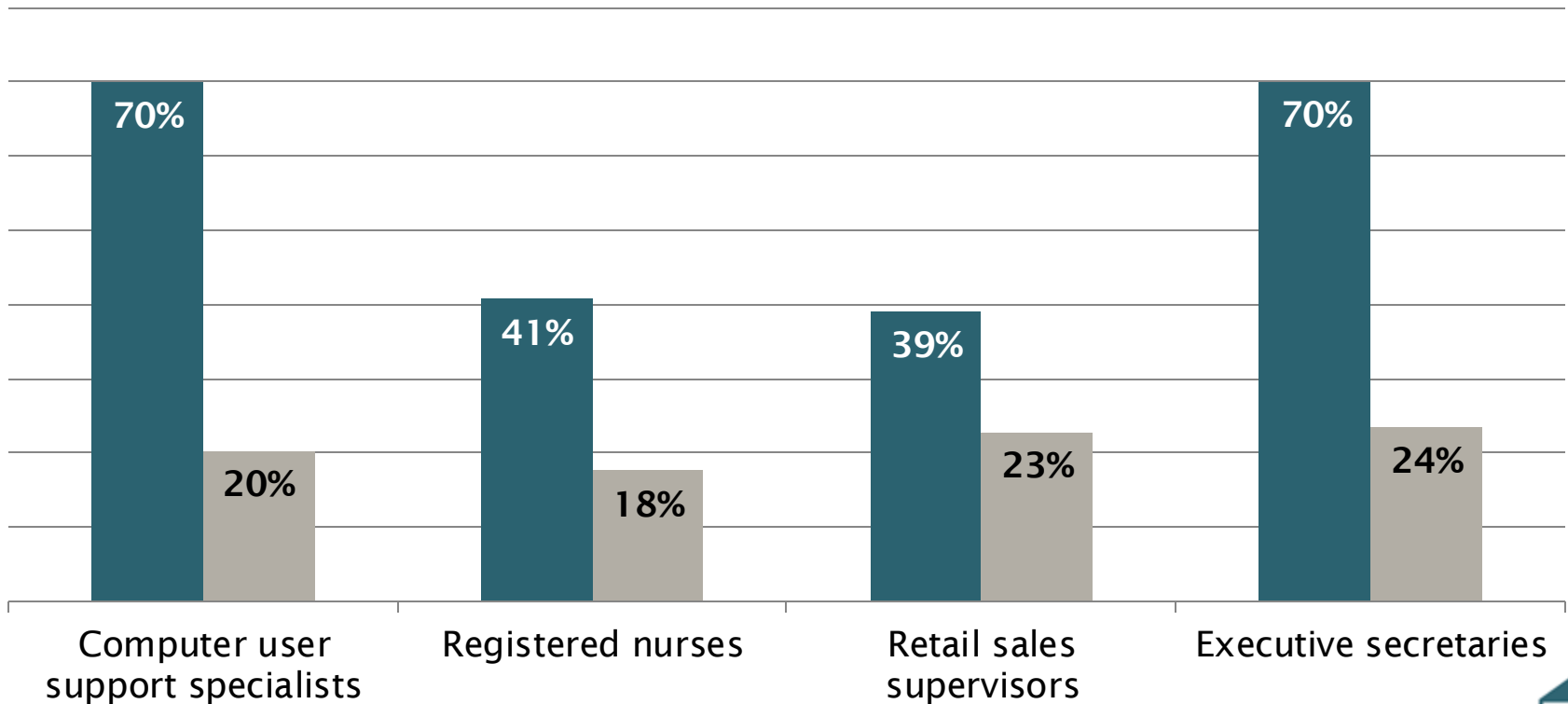


Source: Preliminary analysis of Burning Glass data (2011–2014) by Keith Wardrip, Stuart Andreason, and Mels de Zeeuw

# IV. How much regional variation is there?

## Share of job ads requesting a bachelor's degree+

■ Boston-Cambridge-Quincy Metro Area    ■ Amarillo Metro Area



Source: Preliminary analysis of Burning Glass data (2011–2014) by Keith Wardrip, Stuart Andreason, and Mels de Zeeuw

# V. Where are employers' preferences for a bachelor's degree the highest?

	Computer user support specialists	Registered nurses	Retail sales supervisors	Executive secretaries
Population (avg, 2010-2013)	+	+	+	+
Annual wages (avg, 2010-2013)	+	+	+	+
Percent foreign-born (avg, 2009-2012)	+		+	+
Degree completions/labor force (avg, 2010-2013)				+
Number of research universities	+	+	+	+
Unemployment rate (avg, 2010-2013)			-	
Industry composition (% , 2006-2010)				
Agriculture, forestry, fishing, etc.	-	-	-	
Construction	-	-		-
Retail trade	-	-	-	-
Information	+	+	+	+
Finance, insurance, and real estate	+	+	+	
Professional and scientific services, etc.	+	+	+	+

Results are based on t-tests comparing characteristics of metro areas where preferences for a bachelor's degree are the highest with metro areas where they are the lowest (top fifth vs. bottom fifth). Shaded cells are statistically significant at either the .01 or .05 level. Teal shading (+) indicates higher values in metro areas in the top fifth than in the bottom fifth. Orange shading (-) indicates the reverse.

# VI. Which job advertisements are likely to request a bachelor's degree?

<i>Average Marginal Effects*</i>	<b>Computer user support specialists</b>	<b>Registered nurses</b>	<b>Retail sales supervisors</b>	<b>Executive secretaries</b>
<i>Region (vs. South)</i>				
Northeast	+4%	+9%	+4%	+5%
Midwest	+2%	+3%	+0%	—
West	-3%	+4%	+3%	+2%
<i>Population (avg, 2010–2013) (vs. &lt;250,000)</i>				
250,000–499,999	+3%	+1%	+2%	—
500,000–999,999	+4%	—	+2%	—
1.0–2.49 million	+5%	+2%	+3%	—
2.5 million+	+7%	+5%	+2%	+4%
Annual wages in prior year (\$10,000s)	+5%	+2%	+2%	+5%
Presence of a research university <i>(vs. absence)</i>	+1%	—	+1%	-2%
<i>Degree completions/labor force (avg, 2010–2013) (vs. lowest quartile)</i>				
2 <sup>nd</sup> quartile	+5%	+4%	+2%	+3%
3 <sup>rd</sup> quartile	+5%	+4%	+2%	+8%
Highest quartile	+6%	+2%	+1%	+11%

\* Average marginal effects (AMEs) estimate the change in the probability that a job ad will request at least a bachelor's degree when the independent variable changes by one unit, while keeping all other variables constant. All values are significant at either the 0.01 or 0.05 confidence level.

## VII. What are the implications?

- This research finds that even after controlling for a host of job characteristics, place has a significant impact on access to decent-paying jobs for workers without a college education.
- Expanding opportunity for workers without a bachelor's degree in more “selective” markets hinges on a better understanding of employers' educational preferences.



# Thank You



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